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AIR COMMAND AND STAFF COLLEGE

AIR UNIVERSITY

EDUCATING OUR WORKFORCE

by

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Abstract

The workplace is changing rapidly. Technological advancements, downsizing, and contracting out to specialized companies demand that we continue to develop our adult workers to meet the rising competition. Historically, the Air Force and most private companies have assisted employees with education only if it were job-related or if that employee had lost his/her job as a result of “reductions in force.” The United States is one of the richest nations in the world yet it is estimated that we have an adult literacy rate of approximately 20%, indicating that many adults cannot properly fill out an application or read a bus schedule. Given this kind of literacy rate we will have to provide education to our employees in order to build a flexible but smaller workforce.

Statement of the Research Question

Could increased emphasis on educating our employees enhance the military’s capability to perform its mission in the 21st century?

Introduction

You probably cannot imagine that there are people in your workplace that cannot read and write, but you might be shocked to know the truth.

—Former First Lady Barbara Bush

Mrs. Bush made the above statement during a conference of Human Resource managers in 1995. In her closing remarks she made a plea to establish workplace literacy programs in order to help improve the parlous state of American skill levels. (3:p.16)

While performing the research for this project I was overwhelmed and intrigued by the issue of illiteracy. There is an old saying that goes “You can’t get there from here.” While this paper will not concentrate on illiteracy, it is important that we acknowledge that it still exists in 1999. We must consider this fact in any educational program we examine for skill improvement. A study, in 1995, by the U.S. Department of Education indicates, that in the U.S., approximately 40 million people are in the five lowest levels of literacy and of that 8.2 million are unable to understand the basic task of understanding written information. (3: p.16)

At a time when technological change is increasing dramatically, high school students continue to graduate without the skills to perform basic functions. The workplace may be our last bastion of relief to build a highly skilled and competitive workforce. This paper will examine the types of education available to the work force, the benefits gained by both the employer and employee, and possible strategies for improvement.

Chapter 1

Sources of Education Available

Organization doesn't really accomplish anything. Plans don't accomplish anything, either. Theories of management don't much matter. Endeavors succeed or fail because of the people involved. Only by attracting the best people will you accomplish great deeds.

General Colin Powell

This chapter will discuss possible sources of education available to employers and employees. Government sources as well as traditional educational sources will be discussed in an effort to create proactive learning environments for the employees of the 21st century. In the 21st century we must find ways to build organizations that are high-performance, modern, and agile. This organization must explore methods of reinforcing learning with a workforce that has been significantly reduced of its experienced workers.

The United States government recognized the value of education for its Federal civilian employees by enacting the Government Employees Training Act of 1958 (14:Section 2) which states the following:

- (1) that, in order to promote efficiency and economy in the operation of the Government and provide means for the development of maximum proficiency in the performance of official duties by employees thereof, to establish and maintain the highest standard of performance in the transaction of the public business, and to install and utilize effectively the best modern practices and techniques which have been developed tested, and proved within or outside the government, it is necessary and desirable in the public interest that self-education, self-improvement, and self-training by such employees be supplemented

and extended by Government-sponsored programs, provided by this act, for the training of such employees in the performance of official duties and for the development of skills, knowledge, and abilities which will best qualify them for performance of official duties;

- (3) that such programs shall be designed to lead to (A) improved public service, (B) dollar savings, (C) the building and retention of a permanent cadre of skilled and efficient Government employees, well abreast of scientific, professional, technical, and management development both in and out of Government, (D) lower turnover of personnel, (E) reasonably uniform administration of training, consistent with the missions of the Government department and agencies, and (F) fair and equitable treatment of Government employees with respect to training;

The Total Force concept recognizes the value that the Department of Defense (DoD) civilians bring to the war fighting effort by offering them a variety of educational opportunities. This chapter will discuss the types of educational programs available to civilians employed by the federal government as well as DoD.

Professional Military Education (PME)

Executive Order No. 11348 signed by President Lyndon B. Johnson on April 20.

1967 states:

Foster employee self-development by creating a work environment in which self-development is encouraged, by assuring that opportunities for training and self-development is encouraged, by assuring that opportunities for training and self-study materials are reasonably available where the employee is stationed, and by recognizing self-initiated improvement in performance; (7:Part III, Sec. 302, para. a).

PME satisfies each of the parameters identified above. The Services have a wide range of educational programs available to civilians from skill improvement to managerial and leadership development. These courses may be conducted at the local base, in the formal schoolhouses, or through correspondence. Regardless of where these opportunities may

take place, it is up to each employee and his/her supervisors to avail himself/herself of the best course of action that will benefit all.

Each Air Force military base has an Installation Training Guide (ITG) which establishes the local policies that meet the objectives set forth by Federal mandates and is administered by the local civilian personnel training flight. The local ITG puts forth local operating procedures for: (1) identifying and validating training needs; (2) determining training budget and expenditures; (3) acquiring training; (4) documenting, reporting and evaluating education and training experiences; (5) special programs; and (6) evaluation of training (22:p. 1). Utilizing local procedures, an employee may seek authorization for educational programs that will build skills and knowledge levels that will benefit an organizational requirement for their particular organization.

The Air Force and other DoD facilities offer a variety of technical and professional opportunities by both correspondence and in-residence:

- Air University Seminars
- Air War College (AWC)
- Air Command and Staff College (ACSC)
- Squadron Officer School (SOS)
- US Air Force Extension Course Institute (ECI)
- Air Education and Training Command (AETC) Schools and Courses
- Air Education and Training Command (AETC) Technical Training Schools
- Air University Professional Schools
- Defense Management Education and Training (DMET)
- DoD Joint College Programs (National War College and Industrial College of the Armed Forces) (21:p. 1)

In order to take the above courses by correspondence, if qualified, the employee must simply go to the education center and complete the forms necessary to request the courses. Often times they can accomplish this without supervisor approval but including the supervisor can only enhance training taken by this method. In-residence programs are

highly competitive and take place at formal schoolhouses within AETC at Sheppard AFB TX, Keesler AFB, MS, or Maxwell AFB, AL, to name a few. As these courses are primarily for military service members, there are a limited number of slots available for civilian employees. For example, the ACSC course for academic year 1999 has a class of approximately 600 students of which only 16 are civilians. The Major Commands generally nominate civilian students for in-residence slots, the nomination then goes through several screening boards before it reaches the selection committee at Air Force level. Another avenue of self-development and education is through traditional college courses, which are available across the nation.

Traditional College

The Air Force often views attendance at traditional colleges as a self-development or personal growth initiative. While they seldom fund these types of classes they are beneficiaries of the additional life-long learning that the employee brings to the workplace. Most ITG will list the parameters for funding of traditional college courses and state the funding can only be granted if the employee can show that the course is directly related to the present position and will increase their work performance. While employees normally attend classes during non-duty hours they can possibly work with their supervisors to adjust the work schedule. Most supervisors can enhance the employees learning experience by allowing him or her to adjust their work hours to take classes during his or her lunch hour or early evening. This provides the assistance an employee requires without actually spending any money. Such efforts create a win-win situation for both the employee and organization by having an employee whose learning experience can provide greater contributions to the mission.

Corporations like General Motors, General Electric, Texas Instruments, and Wang have moved into the learning business by establishing educational programs in an effort to produce skilled technicians and managers. “According to Carnegie President Ernest Boyer, the corporate classroom has quietly become like a third leg of the education system in the U. S. and that it is one of the strongest forces for continuing adult education.” (2:p. 74) A Carnegie study made the following statement about corporate classrooms: (2:p. 74)

Corporate programs have acquired “an academic legitimacy of their own,” says the study. The same regional accrediting associations that endorse course work at conventional colleges have approved corporate classes taught by company instructors or by university professors on corporate teach-ins. In-house education and training in company practices and products make up the majority of the 12 million courses paid for by business.

The U.S. government has also actively joined the accreditation game. The new “education czar” Dr. Jerome F. Smith Jr. has been appointed the Chancellor for Education and Professional Development. One of his tasks is to ensure that by January 1, 2000, every DoD institution will be accredited or actively pursuing accreditation and that no educational program or course will be taught unless it is fully certified by recognized accreditation authorities for each respective field. (16:p. 12)

Instructional Methods

There are a variety of instructional methods available to educate our workforce. The illustration on the following page (see Figure 1) highlights those methods surveyed and includes videotapes, lectures, one-on-one training, role-playing, games/simulations, case studies, slides, computer-based training, audio tapes, and films. While trainers can utilize these and other methods to get the information to the employees it will be worthless

unless they can do it in a manner that sticks with the employee and the employee is rewarded for the new skills he/she has acquired. For example, one bank manager sent his teller to a product-training course in the hopes that he/she would be able to steer customers to lucrative services and products the bank offered instead of merely processing transactions. No one changed the teller performance measures, which were based on number of transactions, so they failed to use the training they received and valuable training went down the drain (10:p. 55).

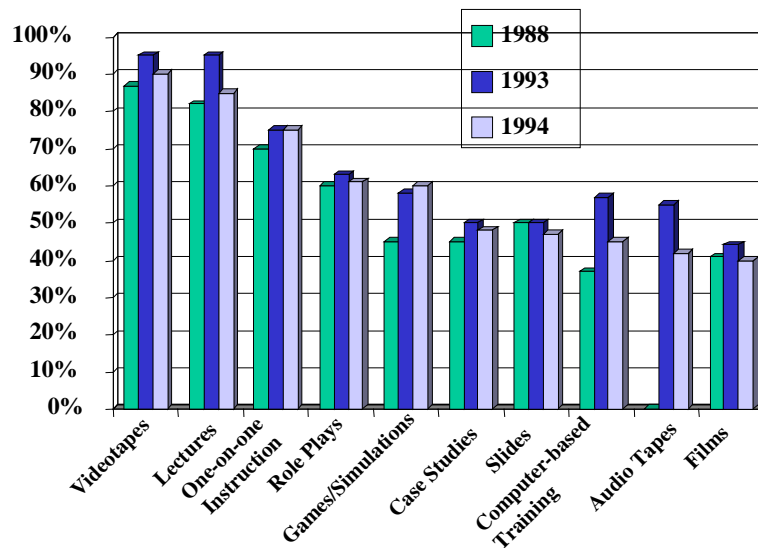


Figure 1 Instructional Methods (10: p. 55)

According to Carolyn Balling, manager of training at Collagen Corporation, training programs should use the most appropriate method to assure the employee will retain the information given. Some retention techniques:

- Give practical examples.
- Cover same information in several ways.
- Use interactive methods, for example, simulations, demonstrations, and role-playing.
- Test retention periodically.

- Use humor when appropriate.
- Provide reference materials.
- Encourage discussion.
- Use available technology to enhance presentations.
- Involve as many senses as possible; sight, smell, taste, touch and hearing.
- Teach mnemonic devices for later use. (10:p. 56)

Ensuring that your training courses use the methods listed above should ensure that you get the biggest bang for your training dollars.

There are any numbers of methods of educating your employees; both the public and private sectors have courses of actions available to them. DoD utilizes it's own PME programs as well as traditional college courses for skills improvement. Corporations are developing their own corporate universities to augment traditional college courses. Whatever method of educating or training you select for your organization you must take into account a variety of instructional methods that will enhance the learning environment of your adult learners. Now that I have looked at ways to create a learning environment, I will discuss whether the training you offer your employee should be job related or general education.

Chapter 2

Job Related v. General Education

We ourselves have to lift the level of our community, the standard of our community to a higher level, make our own society beautiful so that we will be satisfied. We've got to change our minds about each other.

Malcolm X

This chapter will examine job related courses versus general education courses. I believe that all education is as Martha Stewart often says, “a good thing” and that an employer shouldn’t limit the organization’s capabilities by only providing job related training. The community of workers will gain confidence in themselves with general education courses which in turn increases your company’s productivity because you have skilled, knowledgeable, and productive workers who can see the big picture.

Rules of Engagement

Whether a training or educational course taken by an employee is directly related to the job or of general education value employers should realize that learning has taken place. They should also understand that they can only win by having an employee who has expanded his or her horizons. As discussed earlier, the government usually will not pay for general education classes because it is normally considered self-development. One article stated that “Firms continue to invest in training employees as long as it is

profitable. An employer may be willing to invest in training if the firm can benefit from the investment. Because workers are free to change employers, firms are more willing to pay for training that is specific to the firm rather than general training that may be highly portable.” (13:p. 36) While I understand the concern on the portability of general education, studies indicate that employees will generally stay with a company that offers them an environment that treats them fairly and offers chances for upward mobility.

Assistance is readily available for employees that have been displaced due to reduction-in-force and downsizing efforts. The federal government and most companies have programs in place to provide skills improvement for those displaced employees. The federal government also has several programs to assist the unemployed and underemployed adults and youth like the Job Training Partnership Act (JPTA). This program is federally funded, and administered jointly with states and local councils whose membership is predominately from business. The Job Opportunities and Basic Skills program (JOBS), a major feature of the 1988 welfare reform act, is administratively and financially a joint federal-state responsibility. (8:p. 22) The federal government continues to encourage and help states as they attempt to build training systems that meet the needs of workers as well as the firm that hires them. (8:p. 22)

Cost

Today business managers may have to decide whether to invest their dollars in a particular piece of machinery or invest in training programs for their employees. The American workforce requires higher levels of literacy to support the rapid economic and technological changes occurring in our society. Business organizations must become more involved in training and retraining workers to obtain the higher knowledge and skill

levels required now and in the future. The worker of the future will be required to be computer literate, and each will require higher knowledge and skill levels than today's worker. (6:p. 80)

It is estimated that approximately \$60 billion is spent yearly by companies for formal training, and as many as a third of the nation's workers may be served. (18:p. 66) Calculating exactly how much money is invested in educating employees is extremely difficult to do. In order to get a more accurate dollar figure companies have to include the cost of tuition, employee salary, travel expenses (if course is located away from the job site), and possible loss of production time while the employee is away from the work center. Unfortunately, most companies don't document these types of expense, they only look at the cost of tuition. Corporations, while contributing a greater portion to adult education, must consistently reshape their contributions to fit the image of whatever financier is most likely to come forward. "This has shifted from foundations (such as the Carnegie Corporation, the Ford Foundation and most recently the Kellogg Foundation) to federal and state governments that have made funds available for basic education, high school equivalency and English as a Second Language programs. Today, we see a surge of interest in workplace learning as employers become the new source of funding for money-short educational institutions." (17:p. 4) A large amount of money is being paid on educating adults, therefore, choosing to take advantage of the benefits of this training is important to ensure that corporations receive the biggest bang for the buck.

Selection For Attendance

According to Mark Corney, "The low-paid tend to receive less training than the higher paid, although the gap between the proportion of part-time employees (13 percent)

and full-time employees (16 percent) receiving job-related training is smaller than commonly supposed. Young employees (16-24 year olds) also tend to get more training than older employees (24-64 years old), and the incidence of training is higher for the skilled compared with the unskilled. Employer surveys show that the proportion of employers providing on and off-the-job training and using formal training plans is significantly lower among small businesses.” (5:p. 30) Civil servants employed by the Federal government are generally selected for training based on the following factors:

- Trainee or intern training plans
- RIF placements
- New employees
- Career Enhancement Plans
- New supervisors
- Performance problems
- Production problems
- Safety problems
- New technology
- New equipment or programs
- Managerial Competency Assessments (25:p.1)
- Mission changes
- State certification
- Inspection deficiencies
- Employee’s requests
- Laws and regulations
- Modernization of equipment
- Reassignments
- Realignments (base closures or drawdowns)
- Promotions

In this chapter we have discussed the merits of job-related versus general education. Employees that can perform the task they were hired to perform are a valuable asset but employees that can perform multiple tasks will be greatly valued as technology spirals upward. Educated employees are better able to perform multiple tasks and comprehend the bottom line, which can benefit the employee, the company, and ultimately the Department of Defense.

Chapter 3

Who Benefits

“Powell’s Rules for Picking People” – Look for intelligence and judgment and, most critically, a capacity to anticipate, to see around corners. Also look for loyalty, integrity, a high-energy drive, a balanced ego and the drive to get things done.

General Colin Powell

This chapter will examine who benefits by providing a learning environment for the workforce. I believe we all benefit when we have an educated workforce.

Employee

Approximately 89 percent of employees believe their companies are helping them develop the new skills necessary to do their jobs better. (15:p. 6) According to Janet Hansen, “Businesses seldom measure the effect of their training efforts and frequently do not even know how much they spend on training.” (8:p. 23) Mr. Eason adds that “Technically trained work teams can generate positive and cost-savings changes to organizational structure and facilities, their management, and in their operations and procedures.” (6:p. 80) Unfortunately the benefits gained by the employee and organization are often times unmeasurable. Even though the benefits cannot be measured most organization will see a happier workforce when the employees feel that the organization is taking an interest in their development.

Organizations

The 1999 State of the Industry report released by the American Society for Training and Development stated the following:

Companies that invest the most in workplace learning find higher net sales per employee, higher gross profits per employee, and a higher ratio in market-to-book values; compared with companies who invest less in workplace learning. (20:p. 2)

The report indicates that companies will gain a significant advantage when providing training to their employees. An American Management Association survey of 1,003 large and mid-sized corporations showed that companies that increased their training budgets after announcing layoffs were twice as likely to report profits and productivity as the firms that didn't invest more in training. (9:p. 57) To quantify this, companies like General Electric, Xerox, NYNEX, Anheuser-Busch, Motorola, and Arthur Andersen had impressive 79 percent improved long-term profits and 70 percent raised productivity. (9:p. 57)

Section 127 of the Internal Revenue Service code, Employer Provided Educational Assistance is scheduled to expire on 31 May 2000. This tax code allows employers to provide up to \$5,250 per year tax-free, for non-job related education assistance to employees. (23:p. 2) This tax code benefits the company by giving them tax relief for educating its employees. According to the National Association of Independent Colleges and Universities (NAICU) approximately 431,500 students received section 127 benefits in academic year 1992-93. (23:p. 2)

Section 127 is not a government-run program. It does not create or require another government bureaucracy to administer. It is a purely private sector initiative and the one vehicle that encourages employer investment and assistance in providing educational assistance to workers. Like any other benefit, employers are not required to provide section 127 benefits to

their employees. Nevertheless, employers provide these benefits to their employees because they see value and a return on the investment in their employees' education. (23:p.3-4)

This tax code doubles the return on investment for the employer by providing them a tax credit and an employee that is better educated.

Department of Defense

DoD benefits from educating its civilians by having a workforce that is better able to augment the service members in non-combat situations. An educated civilian workforce allows the service members to concentrate on defending the Nation. The appointment of an education czar will centralize the efforts for building a strong civilian workforce. Some of Dr. Jerome F Smith Jr.'s tasks are to "develop and administer a coordinated program of civilian professional education and training throughout DoD. Establish standards for academic qualities, eliminate duplicative or unnecessary programs and curriculum-development efforts, and to ensure that DOD education and training responds to valid needs, competency requirements, and career-development patterns." (16:p. 12) When you think about it, the military is overseen by civilians, therefore, a motivated and educated civilian is a great asset to DoD.

In this chapter we have discussed some of the benefits derived by educating the workforce. We have looked at it from the employee and organization perspective as well as the DoD which employs this writer. I have benefited greatly from the training I have received from the Federal government. This academic year alone the government has spent approximately \$32,000 on my education in military history at Air Command and Staff College.

Chapter 4

Strategies for Improvement

The ideas I stand for are not mine. I borrowed them from Socrates. I swiped them from Chesterfield. I stole them from Jesus. If you don't like their rules, whose would you use?

Dale Carnegie

This chapter will examine some strategies for improving educational opportunities for employees. Unfortunately this is not a perfect world and there will always be room for improvement. I will look at some organizational strategies, labor training, characteristics, patterns of training, retention, and performance improvement.

Organizational Strategies and Labor Training

How do we turn things around? Education Digest, (18:p. 66) contained the following statement:

Carnegie President Ernest L. Boyer describing adult learning as “the hidden sector of American education,” says we must “view formal education not as prework ritual but as continuing process and develop new and more flexible patterns of study that link work and learning at all levels of education.” The report also gives special attention to the adult education role played by community colleges, vocational education, proprietary schools, and professional schools of universities. Its proposals to strengthen adult education and training include:

- Expand use of technologies and new electronic delivery systems;
- Increase exchange of curriculum materials among sectors that train workers—business, labor unions, the military, and the civilian government, as well as segments of higher education;

- Place all federal programs for job training and education for adult workers under the Secretary of Labor to improve overall coordination and quality of programs;
- Fulfill the government's responsibilities to "missing persons"—the millions of adults who do not participate in the workforce;
- Urge labor unions to make training and retraining programs be included as a part of negotiated contracts; and
- Develop multiple skills among workers and managers in order to sustain continued employment and productivity.

These ideas for improvement were expressed in 1991 but they still hold true today and many corporations as well as the government are developing programs that address these very issues. An article in Management Review (author unknown) states the following: "According to the Competitiveness Policy Council, 40 percent of business executives say they can't even modernize their equipment because their workers lack the necessary skills. Considering that 80 percent of the workforce in 2000 will be made up of currently employed workers, it is necessary for business, education and government to view training and development as an investment in "human capital" aimed at empowering the workforce and improving U.S. competitiveness." (4:p. 9)

Organizational Characteristics and Patterns of Training

As technological advances spiral upwards, high school and even bachelor degrees may not be enough for our employees to keep up with the skills necessary for the U. S. to remain competitive. Mr. W. Franklin Spikes stated, "It is estimated that in all categories of occupations, ranging from those that merely need moderate (one to two months) on the job training to those requiring graduate-level work at the master's degree level, there will be a need for increased education preparation. Growth is expected to occur from a five percent level for occupations in the first category, those requiring on-the-job training, to

29 percent in occupations that require master's-level preparation.” (19:p. 9) During our parents generation a high school diploma was enough to get a good job that supported the family, our children will more than likely require post-graduate degrees in order to secure their future.

Unfortunately many of our schools are not preparing our kids and young adults for the workplace. According to Amy Rose, “Adult education has come to be seen as a panacea for the problems of the American workplace. If schools fail to provide the skills and knowledge necessary for people to function effectively in the workplace, the workplace itself will perform this job. Additionally, the new model of the workplace folds various facets of adult education into all elements of work. In response to changing technology, the workplace now asks that all workers continue learning.” (17:p. 4) If the academic system is not preparing students for the workplace then the corporations must take up the slack. One way to accomplish this may be for corporations to form education partnerships with schools and universities to ensure that the skills they need to meet their mission are being taught in the schools. Students are allowed to visit the workplace in Shadow Programs to observe what skills are necessary. At Langley AFB VA, I participate in Work Shadow Programs for children at risk. Each quarter, we bring students to various organizations and talk with them about what it takes to get the types of jobs they have an interest in. They get to spend time with a range of employees and service members from commanders to clerks and visit all kinds of work centers.

The American Society for Training and Development's 1999 State of the Industry report says that leading edge companies train approximately 86 percent of their employees while most companies train only 74 percent of their employees. (20:p. 2) The

types of training employees received were most often job-specific technical skills. These skills including the use of technology were the most frequent kind of training delivered (17%). Additional types of training were management and supervisor training (12%), computer literacy and applications training (12%), and professional skills training (12%). Bringing up the rear was executive development (4%) and basic skills (2%). (20:p. 2) Basic skills are the least offered type of training, hopefully due to a reduced requirement of this type of training. However, I feel that it is probably due to prioritization of company needs.

Retention Tricks

“A company can invest all the money it wants in technology but if there is no one around who knows how to run the machines, to fix the machines, or to figure out how the machines fit in with the overall business goals, a company will never bridge the chasm between companies that thrive in a global economy, and those that fail,” states Laurie Bassi, ASTD Vice President of Research. (20:p. 2) Retention is the key to keeping the good employees that can fix those machines the companies spend so much money on. According to Hank Riehl, CEO of SkillView Technologies, offering continued opportunities for skill enhancement is part of making a company more attractive to the employee. (12:p. 14) Ongoing educational opportunities are a must to keep good people onboard and they will be more willing to stay if they know that the company cares enough about them to provide educational opportunities. What will your employees think if you adopt the attitude that you are unwilling to spend money on skill enhancement because you are afraid that they will leave once they have received these

new skills. Some may leave but frankly, this is just another cost of doing business and the benefits far outweigh the disadvantages. (12:p. 14)

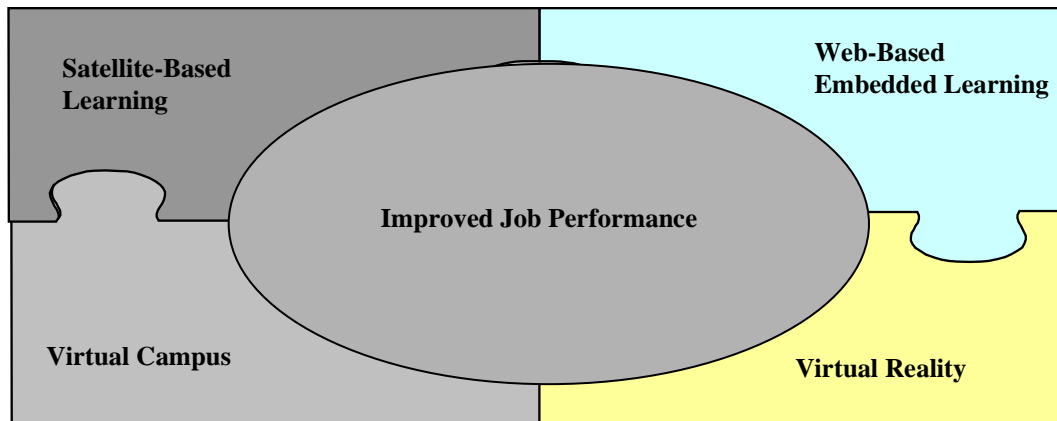
Something else to consider to hold on to valuable employees may be to educate them on business basics. Companies are always asking employees for suggestions on how to make things better or empowering them to work independently and make decisions but many really don't know what the strategic goals of the company are. Some may know, but most don't because management doesn't always let this type of information reach the lower echelons. Many companies have undertaken a course of action to provide business literacy training to the employees. They have found that employees of all backgrounds, and education levels can learn, and are interested in learning about the numbers. (1:p. 16)

Business literacy training provides the context and framework for employees to participate intelligently, creating participative competence. It involves teaching employees such basics as: a) how an income statement works and what the numbers mean; b) the difference between profit and cash and why that's important; and c) key operational measures that employees themselves can affect.

If you start a business literacy program in your company, many more employees will want to stay when you have given them such power.

Performance Improvement

A CORPORATE UNIVERSITY LEARNING LABORATORY: PIECES OF THE PUZZLE



Source: Corporate University Xchange, Inc.

Figure 2 Pieces of the Puzzle (11:p. 58)

Corporate universities are new learning laboratories experimenting with technology-based solutions for lifelong education and improved performance. (11:p. 53) Figure 2 (11:p. 58) depicts some of the methods these corporate universities are applying to increase the knowledge base of their employees as technology spirals upwards and jobs are reengineered and downsized. Satellite-based learning is one way corporate universities are making instruction cheaper, more accessible, and more able to keep pace with technological innovation. (11:p. 57) The Ford Motor Company has developed a satellite network that can give real-time instructions to some 6,000 dealers across the United States.

FORDSTAR uses one-way video and two-way audio via something it calls, the One Touch System—a large interactive, digital worldwide satellite network. In 1996, FORDSTAR delivered programming to

125,000 Ford dealer participants in such department as parts, service, sales, technical, and credit. The system can log on participants in 1,064 sites simultaneously, with a typical class size of 60 to 100 people. The satellite network delivers constantly changing product knowledge. Such rapid deployment of learning is a valuable hedge against the short shelf life of knowledge. (11:p. 57)

Web-based learning can be accomplished via the Internet either worldwide or corporate.

This method of learning allows a trainer to customize the learning experience for individual needs and preferences and gives them the ability to measure performance.

(11:p. 57) Dell University, Dell Computer Corporation, delivers 35 – 45 percent of its curriculum through Web-based tools to provide embedded learning that can take place while an employee is working or in traditional classroom settings. (11:p. 57) Virtual campuses rely on Web-based learning. Oracle University, the corporate university for Oracle Corporation, has been able to reduce its course development from three to six months prior to virtual campuses to less than one month. This reduced course development time enables the university to keep pace with the corporation's product cycle time of 18 months. (11:p. 58) Motorola University was one of the first corporate universities to use virtual reality in its manufacturing training. They have found that using virtual reality to train employees on using complex chip-fabrication machines has several advantages, including better product quality and shorter cycle time. (11:p. 58)

In this chapter, I have showed you some improvements that companies can make to improve their employees skills and productivity. We have looked at various methods used by corporations like satellite-based and web-based learning which, by the way, the Department of Defense has been using for years to train its service members around the world. Those companies that want to see continued growth in the 21st Century are

providing their employees with more than just job-related training, They are also providing general education through business literacy programs.

Chapter 5

Conclusions

The only way to discover the limits of the possible is to go beyond them into the impossible.

Arthur C. Clarke, “Technology and the Future”

In this chapter, I will summarize the previous chapters on educating the workforce. I will summarize my findings, restate the principle conclusions, and discuss the implications of this study.

Summary of Findings

I have discovered through this journey that educating the workforce is a “good thing.” I have described the training available to civilians through PME and how those courses are offered in residence and by correspondence. I have also examined the availability of traditional college to include a variety of instructional methods from the traditional classroom to distance learning via the Internet. I have examined the argument of whether training courses should be limited to job-related courses or opened up to include general education. I have examined some rules of engagement in determining how much to spend on training and in deciding who is to receive the training that limited funding can buy. The NAICU study indicated that you could increase profits and productivity by providing educational assistance to your employees and receive a tax

credit too, therefore, benefiting both the company and employee alike. DoD benefits because education provides qualified people (civilians) to serve as overseer's of the military that defends our country. We have looked at some strategies for improving how we educate our employees. Organizational characteristics, strategies, and patterns of training were discussed in an effort to improve performance and retain good employees.

Ongoing education is a must, according to Hank Riehl, CEO of SkillView Technologies. "There's no alternative not to move forward," he stressed. "The only alternative is to say, 'I'm afraid I'll lose you so I won't train you.' You can't do that. An organization has to take care to make sure it's a great place to work." (12:p. 14)

Principal Conclusions Restated

The first paragraph in the first chapter of Responding to Workplace Change states the following:

Change is redefining today's workplace. The use of technology; the demands of moving toward "high-performance," "modernized," or "agile" organizations; and the importance of innovations and "just-in-time" everything drive an underlying and constant need for creating work and work practices. (24:p. 1)

The 21st Century is speedily approaching and in order to conquer the challenges it will present we must have an educated workforce.

Implications of the Study

Throughout this paper, I have intentionally used the words educating, education, training, and learning interchangeably. Learning can takes place whether received from a formal classroom setting, on the job, or through training received on how to complete a task. Everyone wins when the workforce is educated. It doesn't matter where or how that learning experience was accomplished. I went into this paper with a firm belief that

all education is good and I came out the other end with that belief reinforced. Increased emphasis on educating our employees will not only enhance the military's capability to perform its mission in the 21st Century, it is essential to retain our status as the greatest military in the world.

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